



## SEQUENCE LISTING

<110> Junghans, Richard P.

<120> Antibodies as Chimeric Effector Cell Receptors Against Tumor Antigens

<130> 003

<140> 10/006,773

<141> 2001-10-12

<150> 60/250,089

<151> 2000-11-30

<160> 19

<170> PatentIn version 3.1

<210> 1

<211> 7654

<212> DNA

<213> Homo sapiens and Mus sp.

<220>

<221> CDS

<222> (2428)..(3759)

<223> Chimeric IgTCR sequence contained in retroviral vector. Retroviral vector sequence (non-coding regions) are incidental to the invention. The translated (coding region) is relevant to the invention. (pertinent to Figure 3.)

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cacaatactt ggacgcggat ttactgtctt agcatctatc ggtggccctt cgattgaggg 360
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# Antibodies as Chimeric Effector Cell.ST25

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Leu Val Ala Thr Ala Thr Gly Val His Ser Asp Ile Gln Leu Thr Gln	
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Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr	
30 35 40	
tgt aag gcc agt cag gat gtg ggt act tct gta gct tgg tac cag cag	2598
Cys Lys Ala Ser Gln Asp Val Gly Thr Ser Val Ala Trp Tyr Gln Gln	
45 50 55	
aag cca ggt aag gct cca aag ctg ctg atc tac tgg aca tcc acc cgg	2646
Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Trp Thr Ser Thr Arg	
60 65 70	
cac act ggt gtg cca agc aga ttc agc ggt agc ggt agc ggt acc gac	2694
His Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp	
75 80 85	
ttc acc ttc acc atc agc agc ctc cag cca gag gac atc gcc acc tac	2742
Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr	
90 95 100 105	
tac tgc cag caa tat agc ctc tat cgg tcg ttc ggc caa ggg acc aag	2790
Tyr Cys Gln Gln Tyr Ser Leu Tyr Arg Ser Phe Gly Gln Gly Thr Lys	

# Antibodies as Chimeric Effector Cell.ST25

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gtg gaa atc aaa cga ggt ggc tca gga tgc ggt gga tcc ggc tct ggt Val Glu Ile Lys Arg Gly Gly Ser Gly Ser Gly Gly Ser Gly Ser Gly	125	130	135
ggc tca gga tgc gag gtc caa ctg gtg gag agc ggt gga ggt gtt gtg Gly Ser Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Val Val	140	145	150
caa cct ggc cgg tcc ctg cgc ctg tcc tgc tcc gca tct ggc ttc gat Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Asp	155	160	165
ttc acc aca tat tgg atg agt tgg gtg aga cag gca cct gga aaa ggt Phe Thr Thr Tyr Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly	170	175	180
ctt gag tgg att gga gaa att cat cca gat agc agt acg att aac tat Leu Glu Trp Ile Gly Glu Ile His Pro Asp Ser Ser Thr Ile Asn Tyr	190	195	200
gcg ccg tct cta aag gat aga ttt aca ata tgc cga gac aac gcc aag Ala Pro Ser Leu Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys	205	210	215
aac aca ttg ttc ctg caa atg gac agc ctg aga ccc gaa gac acc ggg Asn Thr Leu Phe Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly	220	225	230
gtc tat ttt tgt gca agc ctt tac ttc ggc ttc ccc tgg ttt gct tat Val Tyr Phe Cys Ala Ser Leu Tyr Phe Gly Phe Pro Trp Phe Ala Tyr	235	240	245
tgg ggc caa ggg acc ccg gtc acc gtc tcc agt gct aag ccc acc acg Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser Ala Lys Pro Thr Thr	250	255	260
acg cca gcg ccg cga cca cca aca ccg gcg ccc acc atc gcg tgc cag Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln	270	275	280
ccc ctg tcc ctg cgc cca gag gcg gct cgg cca gcg gcg ggg ggc gca Pro Leu Ser Leu Arg Pro Glu Ala Ala Arg Pro Ala Ala Gly Gly Ala	285	290	295
gtg cac acg agg ggg ctg gac ttc gcc ctg gat ccc aaa ctc tgc tac Val His Thr Arg Gly Leu Asp Phe Ala Leu Asp Pro Lys Leu Cys Tyr			

2838

2886

2934

2982

3030

3078

3126

3174

3222

3270

3318

3366

# Antibodies as Chimeric Effector Cell.ST25

300	305	310	
ctg ctg gat gga atc ctc ttc atc tat ggt gtc att ctc act gcc ttg			3414
Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile Leu Thr Ala Leu			
315	320	325	
ttc ctg aga gtg aag ttc agc agg agc gca gag ccc ccc gcg tac cag			3462
Phe Leu Arg Val Lys Phe Ser Arg Ser Ala Glu Pro Pro Ala Tyr Gln			
330	335	340	345
cag ggc cag aac cag ctc tat aac gag ctc aat cta gga cga aga gag			3510
Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu			
	350	355	360
gag tac gat gtt ttg gac aag aga cgt ggc cgg gac cct gag atg ggg			3558
Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly			
	365	370	375
gga aag ccg aga agg aag aac cct cag gaa ggc ctg tac aat gaa ctg			3606
Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu			
	380	385	390
cag aaa gat aag atg gcg gag gcc tac agt gag att ggg atg aaa ggc			3654
Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly			
	395	400	405
gag cgc cgg agg ggc aag ggg cac gat ggc ctt tac cag ggt ctc agt			3702
Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser			
	410	415	420
aca gcc acc aag gac acc tac gac gcc ctt cac atg cag gcc ctg ccc			3750
Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro			
	430	435	440
cct cgc taa ctcgacgcgg ccgcggatcc ggattagtcc aatttggttaa			3799
Pro Arg			
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atggaaaata cataactgag aatagagaag ttcagatcaa ggtaggaac agagagacag			4039
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# Antibodies as Chimeric Effector Cell.ST25

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 gaaccatcag atgtttccag ggtgccccaa ggacctgaaa tgaccctgtg ccttatttga 4279  
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# Antibodies as Chimeric Effector Cell.ST25

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# Antibodies as Chimeric Effector Cell.ST25

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acgacggcca gtgcc 7654

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<210> 2
<211> 443
<212> PRT
<213> Homo sapiens and Mus sp.

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<400> 2

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Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
20          25          30

```

```

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
35          40          45

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```

Gly Thr Ser Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
50          55          60

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# Antibodies as Chimeric Effector Cell.ST25

Leu Leu Ile Tyr Trp Thr Ser Thr Arg His Thr Gly Val Pro Ser Arg  
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Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser  
85 90 95

Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Leu  
100 105 110

Tyr Arg Ser Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Gly Gly  
115 120 125

Ser Gly Ser Gly Gly Ser Gly Ser Gly Gly Ser Gly Ser Glu Val Gln  
130 135 140

Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg Ser Leu Arg  
145 150 155 160

Leu Ser Cys Ser Ala Ser Gly Phe Asp Phe Thr Thr Tyr Trp Met Ser  
165 170 175

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Glu Ile  
180 185 190

His Pro Asp Ser Ser Thr Ile Asn Tyr Ala Pro Ser Leu Lys Asp Arg  
195 200 205

Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Phe Leu Gln Met  
210 215 220

Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Phe Cys Ala Ser Leu  
225 230 235 240

Tyr Phe Gly Phe Pro Trp Phe Ala Tyr Trp Gly Gln Gly Thr Pro Val  
245 250 255

# Antibodies as Chimeric Effector Cell.ST25

Thr Val Ser Ser Ala Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro  
260 265 270

Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu  
275 280 285

Ala Ala Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp  
290 295 300

Phe Ala Leu Asp Pro Lys Leu Cys Tyr Leu Leu Asp Gly Ile Leu Phe  
305 310 315 320

Ile Tyr Gly Val Ile Leu Thr Ala Leu Phe Leu Arg Val Lys Phe Ser  
325 330 335

Arg Ser Ala Glu Pro Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr  
340 345 350

Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys  
355 360 365

Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn  
370 375 380

Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu  
385 390 395 400

Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly  
405 410 415

His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr  
420 425 430

Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg  
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# Antibodies as Chimeric Effector Cell.ST25

<210> 3  
 <211> 504  
 <212> DNA  
 <213> Mus sp.

<220>  
 <221> CDS  
 <222> (6)..(425)  
 <223> MB3.6 Heavy chain V region, plus leader

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Met Asn Phe Gly Phe Ser Leu Ile Phe Leu Val Leu Val Leu Lys		
1 5 10 15		
ggg gtc cag tgt gaa gtg gtg gtg gtg gag tct ggg gga ggc ttc gtg		98
Gly Val Gln Cys Glu Val Val Val Val Glu Ser Gly Gly Gly Phe Val		
20 25 30		
aag cct gga ggg tcc ctg aaa ctc tcc tgt gca gcc gct gga ttc act		146
Lys Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ala Gly Phe Thr		
35 40 45		
ttc agt aga tat gcc atg tct tgg gtt cgc cag act ccg gag aag agg		194
Phe Ser Arg Tyr Ala Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg		
50 55 60		
ctg gag tgg gtc gca acc ata agt agt ggt ggt agt cac acc tac tat		242
Leu Glu Trp Val Ala Thr Ile Ser Ser Gly Gly Ser His Thr Tyr Tyr		
65 70 75		
cca gac agt gtg aag ggg cga ttc acc atc tcc aga gac aat gcc aag		290
Pro Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys		
80 85 90 95		
aac acc ctg tac ctg caa atg agc agt ctg agg tct gag gac acg gcc		338
Asn Thr Leu Tyr Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Thr Ala		
100 105 110		
ata tat tac tgt gca aga ccg ggt tac gac agg ggg gcc tgg ttt ttc		386
Ile Tyr Tyr Cys Ala Arg Pro Gly Tyr Asp Arg Gly Ala Trp Phe Phe		
115 120 125		
gat gtc tgg ggc gca ggg acc acg gtc acc gtc tcc tca ggtaagtgtg		435
Asp Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser		
130 135 140		

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actaagctt 504

<210> 4  
<211> 140  
<212> PRT  
<213> Mus sp.

<400> 4

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1 5 10 15

Val Gln Cys Glu Val Val Val Val Glu Ser Gly Gly Gly Phe Val Lys  
20 25 30

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ala Gly Phe Thr Phe  
35 40 45

Ser Arg Tyr Ala Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu  
50 55 60

Glu Trp Val Ala Thr Ile Ser Ser Gly Gly Ser His Thr Tyr Tyr Pro  
65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn  
85 90 95

Thr Leu Tyr Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Thr Ala Ile  
100 105 110

Tyr Tyr Cys Ala Arg Pro Gly Tyr Asp Arg Gly Ala Trp Phe Phe Asp  
115 120 125

Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser  
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## Antibodies as Chimeric Effector Cell.ST25

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<211>	483
<212>	DNA
<213>	Mus sp.

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<220>
<221> CDS
<222> (16)..(399)
<223> MB3.6 Light chain V region, plus leader
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[illegible]

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<210> 6  
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<400> 6

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1 5 10 15

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20 25 30

Val Thr Pro Gly Asp Ser Val Ser Leu Ser Cys Arg Ala Ser Gln Ile  
35 40 45

Ile Ser Asn Asn Leu His Trp Tyr Gln Gln Lys Ser His Glu Ser Pro  
50 55 60

Arg Leu Leu Ile Lys Tyr Ala Ser Gln Ser Ile Ser Gly Ile Pro Ser  
65 70 75 80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn  
85 90 95

Ser Val Glu Thr Glu Asp Phe Gly Met Tyr Phe Cys Gln Gln Ser Asn  
100 105 110

Ser Trp Pro Leu Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg  
115 120 125

<210> 7  
<211> 258  
<212> DNA  
<213> Mus sp.

<220>

# Antibodies as Chimeric Effector Cell.ST25

<221> misc\_feature

<222> (1)..(258)

<223> Light chain leader plus sFv of MB3.6

```

<400> 7
gatatcagat ctcagctgtc tagacatatg gttttcacac ctcagatann nnnnnnnnnn      60
nnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnngggac aaagctggag      120
atcaaagggtg gctcaggatc ggggtggagcc ggctctggtg gctcaggatc ggaagtgggtg      180
gtggtggagn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnacc      240
acggtcaccg tctccagt      258
  
```

<210> 8

<211> 682

<212> DNA

<213> Mus sp.

<220>

<221> CDS

<222> (20)..(418)

<223> 3D8 Heavy chain V region, plus leader

```

<400> 8
tgaacacgga cccctcacc atg aac ttc ggg ctc agc ttg att ttc ctt gtc      52
                    Met Asn Phe Gly Leu Ser Leu Ile Phe Leu Val
                    1          5          10

ctt gtt tta aaa ggt gtc cag tgt gaa gtg aag gtg gtg gag tct ggg      100
Leu Val Leu Lys Gly Val Gln Cys Glu Val Lys Val Val Glu Ser Gly
                    15          20          25

gga ggc tta gtg aag cct gga gcg tct ctg aaa ctc tcc tgt gca gcc      148
Gly Gly Leu Val Lys Pro Gly Ala Ser Leu Lys Leu Ser Cys Ala Ala
                    30          35          40

tct gga ttc act ttc agt aac tat ggc atg tct tgg gtt cgc cag act      196
Ser Gly Phe Thr Phe Ser Asn Tyr Gly Met Ser Trp Val Arg Gln Thr
                    45          50          55

tca gac aag agg ctg gag tgg gtc gca tcc att agt agt ggt ggt gat      244
Ser Asp Lys Arg Leu Glu Trp Val Ala Ser Ile Ser Ser Gly Gly Asp
                    60          65          70          75
  
```

# Antibodies as Chimeric Effector Cell.ST25

```

agc acc ttc tat gca gac aat gta aag ggc cga ttc acc atc tcc aga      292
Ser Thr Phe Tyr Ala Asp Asn Val Lys Gly Arg Phe Thr Ile Ser Arg
                        80                        85                        90

gag aat gcc aag aac acc ctg tac ctg caa atg agt agt ctg aag tct      340
Glu Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser
                        95                        100                        105

gag gac acg gcc ttg tat tac tgt gca aga gac gat cta ttt aac tgg      388
Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Arg Asp Asp Leu Phe Asn Trp
                        110                        115                        120

ggc caa ggc acc act ctc aca gtc tca tca gccaaaacaa cagccccatc      438
Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
                        125                        130

ggtctatcca ctggcccctg tgtgtggaga tacaattggc tcctcgggtga ctttaggatg      498
cctgggtcaag gggtattttcc ttgagccagt gaccttgacc tggaactctg gatccctgtc      558
cagtgggtgtg cacatcttcc cagctgtctt gcagtctgac ctctacaccc tcagcagctc      618
agtgactgta acctcgagca cctggcccag ccagtccatc acttgcaatg tggcccaccc      678
ggca                                                                682

```

<210> 9  
 <211> 133  
 <212> PRT  
 <213> Mus sp.

<400> 9

```

Met Asn Phe Gly Leu Ser Leu Ile Phe Leu Val Leu Val Leu Lys Gly
1          5          10          15

```

```

Val Gln Cys Glu Val Lys Val Val Glu Ser Gly Gly Gly Leu Val Lys
20          25          30

```

```

Pro Gly Ala Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35          40          45

```

```

Ser Asn Tyr Gly Met Ser Trp Val Arg Gln Thr Ser Asp Lys Arg Leu

```



## Antibodies as Chimeric Effector Cell.ST25

```

50      55      60
Glu Trp Val Ala Ser Ile Ser Ser Gly Gly Asp Ser Thr Phe Tyr Ala
65      70      75      80
Asp Asn Val Lys Gly Arg Phe Thr Ile Ser Arg Glu Asn Ala Lys Asn
85      90      95
Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Leu
100      105      110
Tyr Tyr Cys Ala Arg Asp Asp Leu Phe Asn Trp Gly Gln Gly Thr Thr
115      120      125
Leu Thr Val Ser Ser
130

```

<210>	10
<211>	729
<212>	DNA
<213>	Mus sp.

```
<220>
<221> CDS
<222> (15)..(410)
<223> 3D8 Light chain V region, plus leader
```

[illegible]

# Antibodies as Chimeric Effector Cell.ST25

```

Ser Gln Ser Leu Leu Tyr Ser Asn Gly Lys Thr Tyr Leu Asn Trp Leu
45          50          55          60
tta cag agg cca ggc cag tct cca aag cgc cta atc tat ctg gtg tct      242
Leu Gln Arg Pro Gly Gln Ser Pro Lys Arg Leu Ile Tyr Leu Val Ser
65          70          75

aaa ctg gac tct gga gtc cct gac agg ttc act ggc agt gga tca gga      290
Lys Leu Asp Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly
80          85          90

aca gat ttt aca ctg aaa atc agc aga gtg gag gct gag gat ttg gga      338
Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu Gly
95          100          105

gtt tat tac tgc gtg caa ggt aca cat ttt cct cac acg ttc gga ggg      386
Val Tyr Tyr Cys Val Gln Gly Thr His Phe Pro His Thr Phe Gly Gly
110          115          120

ggg acc aag ctg gaa ata aaa cgg gctgatgctg caccaactgt atccatcttc      440
Gly Thr Lys Leu Glu Ile Lys Arg
125          130

ccaccatcca gtgagcagtt aacatctgga ggtgcctcag tcgtgtgctt cttgaacaac      500

ttctacccca aagacatcaa tgtcaagtgg aagattgatg gcagtgaacg acaaaatggc      560

gtcctgaaca gttggactga tcaggacagc aaagacagca cctacagcat gagcagcacc      620

ctcacgttga ccaaggacga gtatgaacga cataacagct atacctgtga ggccactcac      680

aagacatcaa cttcacccat tgtcaagagc ttcaacagga atgagtgtt      729

```

<210> 11  
 <211> 132  
 <212> PRT  
 <213> Mus sp.

<400> 11

```

Met Ser Pro Ala Gln Phe Leu Phe Leu Leu Val Leu Trp Ile Gln Glu
1          5          10          15

```

```

Thr Asn Gly Asp Val Val Met Thr Gln Thr Pro Leu Thr Leu Ser Val
20          25          30

```

# Antibodies as Chimeric Effector Cell.ST25

Thr Ile Gly Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu  
35 40 45

Leu Tyr Ser Asn Gly Lys Thr Tyr Leu Asn Trp Leu Leu Gln Arg Pro  
50 55 60

Gly Gln Ser Pro Lys Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp Ser  
65 70 75 80

Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr  
85 90 95

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys  
100 105 110

Val Gln Gly Thr His Phe Pro His Thr Phe Gly Gly Thr Lys Leu  
115 120 125

Glu Ile Lys Arg  
130

<210> 12  
<211> 736  
<212> DNA  
<213> Mus sp.

<220>  
<221> CDS  
<222> (14)..(430)  
<223> 4D4 Heavy chain V region, plus leader

<400> 12  
actgactcta acc atg gga tgg aga tgg atc ttt ctt ttc ctc ctg tca 49  
Met Gly Trp Arg Trp Ile Phe Leu Phe Leu Leu Ser  
1 5 10  
gga act gca ggt gtc cat tgc cag gtt cag ctg cag cag tct gga cct 97  
Gly Thr Ala Gly Val His Cys Gln Val Gln Leu Gln Gln Ser Gly Pro  
15 20 25

# Antibodies as Chimeric Effector Cell.ST25

gag ctg gtg aag cct ggg gct tta gtg aag ata tcc tgc aag gct tct	145
Glu Leu Val Lys Pro Gly Ala Leu Val Lys Ile Ser Cys Lys Ala Ser	
30 35 40	
ggt tac acc ttc aca agc tac gat ata aac tgg gtg aag cag agg cct	193
Gly Tyr Thr Phe Thr Ser Tyr Asp Ile Asn Trp Val Lys Gln Arg Pro	
45 50 55 60	
gga cag gga ctt gag tgg att gga tgg att tat cct gga gat ggt ggt	241
Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Tyr Pro Gly Asp Gly Gly	
65 70 75	
act aat tac aat gag aaa ttc aag ggc aag gcc aca ctg act gca gac	289
Thr Asn Tyr Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp	
80 85 90	
aaa tcc tcc agc aca gcc tac atg cag ctc agt agc ctg act tct gag	337
Lys Ser Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu	
95 100 105	
aac tct gca gtc tat ttc tgt gca aga ggg ggt aac ttc cct tct tat	385
Asn Ser Ala Val Tyr Phe Cys Ala Arg Gly Gly Asn Phe Pro Ser Tyr	
110 115 120	
gct atg gac tac tgg ggt caa gga acc tca gtc acc gtc tcc tca	430
Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser	
125 130 135	
gccaaaaacga ccccccatc tgtctatcca ctggcccctg gatctgctgc ccaaactaac	490
tccatggtga ccccgggatg cctggtcaag ggctatttcc ctgagccagt gacagtgacc	550
tggaactctg gatccctgtc cagcgggtgtg cacaccttcc cagctgtcct gcagtctgac	610
ctctacactc tgagcagctc agtgactgtc cctccagca cctggcccag cgagaccgtc	670
acctgcaacg ttgcccaccc ggccagcagc accaagggtg acaagaaaat tgtgcccagg	730
gattgt	736

<210> 13  
 <211> 139  
 <212> PRT  
 <213> Mus sp.

<400> 13

# Antibodies as Chimeric Effector Cell.ST25

Met Gly Trp Arg Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly  
1 5 10 15

Val His Cys Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys  
20 25 30

Pro Gly Ala Leu Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
35 40 45

Thr Ser Tyr Asp Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu  
50 55 60

Glu Trp Ile Gly Trp Ile Tyr Pro Gly Asp Gly Gly Thr Asn Tyr Asn  
65 70 75 80

Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser  
85 90 95

Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asn Ser Ala Val  
100 105 110

Tyr Phe Cys Ala Arg Gly Gly Asn Phe Pro Ser Tyr Ala Met Asp Tyr  
115 120 125

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
130 135

<210> 14  
<211> 504  
<212> DNA  
<213> Mus sp.

<220>  
<221> CDS  
<222> (7)..(402)  
<223> 4D4 Light chain V region, plus leader

<400> 14 48  
ctcaaa atg aag ttg cct gtt agg ctg ttg gtg ctg atg ttc tgg att  
Met Lys Leu Pro Val Arg Leu Leu Val Leu Met Phe Trp Ile  
1 5 10

cct gct tcc aac agt gat gtt ttg atg acc caa tct cca ctg tcc ctg 96  
Pro Ala Ser Asn Ser Asp Val Leu Met Thr Gln Ser Pro Leu Ser Leu  
15 20 25 30

cct gtc agt ctt gga gat caa gcc tcc atc tct tgc aga tct agt cag 144  
Pro Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln  
35 40 45

agc att gtc cat agt aat gga gac acc tat tta gaa tgg tac ctg cag 192  
Ser Ile Val His Ser Asn Gly Asp Thr Tyr Leu Glu Trp Tyr Leu Gln  
50 55 60

aaa cca ggc cag tct cca aag ctg ctg atc tac aag gtt tcc gac cga 240  
Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val Ser Asp Arg  
65 70 75

ttt tct ggg gtc cca gac agg ttc agt ggc agt gga tca ggg aca gat 288  
Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp  
80 85 90

ttc aca ctg aag atc agc aga gtg gag gct gag gat ctg gga gtt tat 336  
Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr  
95 100 105 110

ttc tgc ttt caa ggt tca cat gtt ccg tac gcg ttc gga ggg ggg acc 384  
Phe Cys Phe Gln Gly Ser His Val Pro Tyr Ala Phe Gly Gly Gly Thr  
115 120 125

aag ctg gaa ata aaa cgg gctgatgctg caccaactgt atccatcttc 432  
Lys Leu Glu Ile Lys Arg  
130

ccaccatcca gtgagcagtt aacatctgga ggtgcctcag tcgtgtgctt cttgaacaac 492  
504  
ttctacccca aa

<210> 15  
<211> 132  
<212> PRT  
<213> Mus sp.  
<400> 15

# Antibodies as Chimeric Effector Cell.ST25

Met Lys Leu Pro Val Arg Leu Leu Val Leu Met Phe Trp Ile Pro Ala  
1 5 10 15

Ser Asn Ser Asp Val Leu Met Thr Gln Ser Pro Leu Ser Leu Pro Val  
20 25 30

Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile  
35 40 45

Val His Ser Asn Gly Asp Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro  
50 55 60

Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val Ser Asp Arg Phe Ser  
65 70 75 80

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
85 90 95

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys  
100 105 110

Phe Gln Gly Ser His Val Pro Tyr Ala Phe Gly Gly Gly Thr Lys Leu  
115 120 125

Glu Ile Lys Arg  
130

<210> 16  
<211> 761  
<212> DNA  
<213> Mus sp.

<220>  
<221> CDS  
<222> (62)..(478)  
<223> 3E11 Heavy chain V region, plus leader

# Antibodies as Chimeric Effector Cell.ST25

<400> 16  
cctggattca atttccagtt cctcacattc agtgcacgac actgaacacg gacccctcac 60  
c atg aac ttc ggg ctc agc ttg att ttc ctt gtc ctt gtt tta aaa ggt 109  
Met Asn Phe Gly Leu Ser Leu Ile Phe Leu Val Leu Val Leu Lys Gly 15  
1 5 10  
gtc cag tgt gaa gtg aaa ctg gtg gag tct ggg gga gac tta atg aac 157  
Val Gln Cys Glu Val Lys Leu Val Glu Ser Gly Gly Asp Leu Met Asn 30  
20 25  
cct gga gcg tct ctg aaa ctc tcc tgt gca gcc tct gga ttc agt ttc 205  
Pro Gly Ala Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe 45  
35 40  
agt aac tat ggc atg tct tgg gtt cgc cag act tca gac aag agg ctg 253  
Ser Asn Tyr Gly Met Ser Trp Val Arg Gln Thr Ser Asp Lys Arg Leu 60  
50 55  
gag tgg gtc gct tcc att agt acg ggt ggt gct aat acc ttc tat cca 301  
Glu Trp Val Ala Ser Ile Ser Thr Gly Gly Ala Asn Thr Phe Tyr Pro 80  
65 70 75  
gac aat gta aag ggc cga ttc acc att tcc aga gag aat gcc aag aac 349  
Asp Asn Val Lys Gly Arg Phe Thr Ile Ser Arg Glu Asn Ala Lys Asn 95  
85 90  
acc cta tac ctg caa atg agt agt ctg aag tct gag gac acg gcc ttg 397  
Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Leu 110  
100 105  
tat ttc tgt gca aga gat agt cac tcc gta ggt tgt tgg ttt gct acc 445  
Tyr Phe Cys Ala Arg Asp Ser His Ser Val Gly Cys Trp Phe Ala Thr 125  
115 120  
tgg ggc caa ggg act ctg gtc act gtc tct gca gccaaaacaa caccctcatc 498  
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala 135  
130 135  
agtctatcca ctggcccctg ggtgtggaga tactactggt tcctccgtga ctctgggatg 558  
cctgggtcaag ggctacttcc ctgagtcagt gactgtgact tggaactccg gatccctgcc 618  
cagcagtggtg cacaccttcc cagctctcct gcagtctgga ctctacacta tgagcagctc 678  
agtgactgtc cctccagca cctggccaag ccagaccgtt acctgcagtg ttgctcacc 738  
agccagcagc accacggtgg aca 761



# Antibodies as Chimeric Effector Cell.ST25

<210> 17  
 <211> 139  
 <212> PRT  
 <213> Mus sp.

<400> 17

Met Asn Phe Gly Leu Ser Leu Ile Phe Leu Val Leu Val Leu Lys Gly  
 1 5 10 15

Val Gln Cys Glu Val Lys Leu Val Glu Ser Gly Gly Asp Leu Met Asn  
 20 25 30

Pro Gly Ala Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe  
 35 40 45

Ser Asn Tyr Gly Met Ser Trp Val Arg Gln Thr Ser Asp Lys Arg Leu  
 50 55 60

Glu Trp Val Ala Ser Ile Ser Thr Gly Gly Ala Asn Thr Phe Tyr Pro  
 65 70 75 80

Asp Asn Val Lys Gly Arg Phe Thr Ile Ser Arg Glu Asn Ala Lys Asn  
 85 90 95

Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Leu  
 100 105 110

Tyr Phe Cys Ala Arg Asp Ser His Ser Val Gly Cys Trp Phe Ala Thr  
 115 120 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala  
 130 135

<210> 18  
 <211> 698  
 <212> DNA

# Antibodies as Chimeric Effector Cell.ST25

. <213> Mus sp.

<220>

<221> CDS

<222> (6)..(401)

<223> 3E11 Light chain V region, plus leader

```

<400> 18
ccagc atg ggc atc aag atg gaa tca cag act ctg gtc ttc ata tcc ata 50
      Met Gly Ile Lys Met Glu Ser Gln Thr Leu Val Phe Ile Ser Ile
      1          5          10          15

ctg ctc tgg tta tat gga gct gat ggg aac att gta atg acc caa tct 98
Leu Leu Trp Leu Tyr Gly Ala Asp Gly Asn Ile Val Met Thr Gln Ser
      20          25          30

ccc aaa tcc atg tcc atg tca gta gga gag agg gtc acc ttg acc tgc 146
Pro Lys Ser Met Ser Met Ser Val Gly Glu Arg Val Thr Leu Thr Cys
      35          40          45

aag gcc agt gag aat gtg gtt act tat gtt tcc tgg tat caa cag aaa 194
Lys Ala Ser Glu Asn Val Val Thr Tyr Val Ser Trp Tyr Gln Gln Lys
      50          55          60

cca gag cag tct cct aaa ctg ctg ata tac ggg gca tcc aac cgg tac 242
Pro Glu Gln Ser Pro Lys Leu Leu Ile Tyr Gly Ala Ser Asn Arg Tyr
      65          70          75

act ggg gtc ccc gat cgc ttc aca ggc agt gga tct gca aca gat ttc 290
Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Ala Thr Asp Phe
      80          85          90

act ctg acc atc agc agt gtg cag gct gaa gac ctt gca gat tat cac 338
Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Asp Tyr His
      100          105          110

tgt gga cag ggt tac agc tat ccg tac acg ttc gga ggg ggg acc aag 386
Cys Gly Gln Gly Tyr Ser Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys
      115          120          125

ctg gaa ata aaa cgg gctgatgctg caccaactgt atccatcttc ccaccatcca 441
Leu Glu Ile Lys Arg
      130

gtgagcagtt aacatctgga ggtgcctcag tcgtgtgctt cttgaacaac ttctacccca 501

aagacatcaa tgtcaagtgg aagattgatg gcagtgaacg acaaaatggc gtcctgaaca 561

```

g ttg gactga tcaggacagc aaagacagca cctacagcat gagcagcacc ctcacgttga 621  
 ccaaggacga gtatgaacga cataacagct atacctgtga ggccactcac aagacatcaa 681  
 cttcacccat cgtcaag 698

<210> 19  
 <211> 132  
 <212> PRT  
 <213> Mus sp.

<400> 19

Met Gly Ile Lys Met Glu Ser Gln Thr Leu Val Phe Ile Ser Ile Leu  
 1 5 10 15

Leu Trp Leu Tyr Gly Ala Asp Gly Asn Ile Val Met Thr Gln Ser Pro  
 20 25 30

Lys Ser Met Ser Met Ser Val Gly Glu Arg Val Thr Leu Thr Cys Lys  
 35 40 45

Ala Ser Glu Asn Val Val Thr Tyr Val Ser Trp Tyr Gln Gln Lys Pro  
 50 55 60

Glu Gln Ser Pro Lys Leu Leu Ile Tyr Gly Ala Ser Asn Arg Tyr Thr  
 65 70 75 80

Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Ala Thr Asp Phe Thr  
 85 90 95

Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Asp Tyr His Cys  
 100 105 110

Gly Gln Gly Tyr Ser Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu  
 115 120 125

Glu Ile Lys Arg

